



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,534	04/11/2001	Robert K. Rowe	1023.1110102	3295

7590 04/05/2002

David M. Crompton  
CROMPTON, SEAGER & TUFTE, LLC  
331 Second Avenue South, Suite 895  
Minneapolis, MN 55401-2246

EXAMINER

WERNER, BRIAN P

ART UNIT PAPER NUMBER

2621

DATE MAILED: 04/05/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/832,534

Applicant(s)

ROWE ET AL.

Examiner

Brian P. Werner

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a), which requires the following (with emphasis added):

The drawing in a nonprovisional application must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box).

Therefore, the drawings must show every feature of the invention specified in the claims. For example, database and means for comparing of claim 1, the grating array spectrometers of claims 4 and 5, classification algorithm of claim 9, the calibration optical spectra of claim 23, the enrollment database of claim 27, the threshold of claim 33, the classification features of claim 34, the addition of enrollment optical spectral data of claim 41, the discriminant analysis of claim 46, the dorsal and ventral surfaces of claim 48, the entire identification process as claimed in cascading dependent claims 22-25 and 34-38, etc. (this list is not exhaustive) along with every other claimed feature must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

**A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.**

***Information Disclosure Statement***

2. The information disclosure statement filed on October 15, 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The references that were provided have been considered, and initialed by the examiner on the form 1449. The references not provided have not been considered, as indicated by the lines drawn on the form 1449. Numerous additional references were provided that were not listed on the form 1449. These references will be placed in the file.

***Specification***

3. The U.S. patent application serial numbers at specification page 1, and elsewhere throughout the specification, should be updated with U.S. Patent Numbers when available.

4. The disclosure is objected to because of the following informalities: Specification page 23, lines 13-14, are missing a serial numbers. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 10, 11, 12, 15-18, 20, 33-39, 42-45, 47 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Wunderman et al. (US 6,122,042 A). Regarding claim 48, Wunderman discloses a biometric identification method (i.e., the embodiment of figure 12 is relied upon here) comprising: measuring the spectral properties ("spectrometric analysis" at column 9, line 18; "spectroscopy" at column 11, line 7) of the sub-epidermal tissue ("optical subcutaneous identification" at column 37, line 62; the spectrometric analysis disclosed by Wunderman is applied to the identification of humans, by exciting and measuring the spectral characteristics of subcutaneous tissue in the embodiment of figure 12) at the web between the index finger and thumb (figure 12, the leftmost numeral 168); and applying an algorithm to the spectral properties ("discrimination algorithm" at column 39, line 62) to perform a biometric task

("identification of human individuals" at column 37, line 56). Regarding claims 10, 20, 33 and 47, Wunderman discloses: a number of enrollment optical tissue spectra ("RADEL/PIXEL OSV ... 240 additional variables" at column 38, line 56; these variables relate to measured optical tissue spectra; the spectra is measured using the "IDEA probe assemblies 168" as described at column 37, line 63, and depicted in figure 12; the spectra are measured as described at column 9, lines 13-55; specifically, refer to "spectrometric analysis" at column 9, line 18) from a number of individuals ("all persons in its pretrained library" at column 39, line 29), the spectra having a plurality of measurement wavelengths ("N=15 distinct wavelengths" at column 9, line 14); obtaining a target spectrum from an individual ("the same individual being later checked" at column 39, line 10, also referred to as "the tested individual" at column 39, line 31; the target individual's spectra is read at column 39, line 48; i.e., "optical throughput values from the LED/detector"), the target spectrum having a number of measurement wavelengths (the spectra is read in the same manner as the stored spectra); performing discriminant analysis on the target spectrum ("discrimination algorithm" at column 39, line 62; "discriminant analysis" at column 17, line 20) and all of the enrolled spectral data ("compare that individual's values with the ... values for all persons in its pretrained library" at column 39, line 28); and positively identifying the target identity only if the discriminant analysis is satisfied ("predetermined threshold" at column 39, line 19; "match criteria for identification" at column 39, line 53) for at least one of the enrolled persons ("closest, next closest, etc." at column 39, line 30). Regarding claims 10 and 20 specifically, Wunderman disclosed the apparatus, comprising a computer, input and

Art Unit: 2621

output devices and a database, as depicted in figure 1A. Regarding claims 11, 20 and 45, optical radiation reflected from sub-epidermal tissue is measured ("optical subcutaneous identification" at column 37, line 62; the energy is reflected from the tissue as depicted in figure 1B; i.e., the optical energy is "retroreflected" at column 11, line 61). Regarding claims 12 and 20, elements 34, 42 and 40 of figure 1A constitute a spectrometer (i.e., these elements measure the energy of the reflected wavelengths, and perform a "spectrometric analysis" at column 9, line 18). Regarding claims 15-17 and 42-44, near-infrared, visible, and near-ultraviolet are disclosed ("400nm to 5,000 nm" at column 6, line 25). Regarding claims 18 and 34, a classification algorithm is used ("recognize a certain class" at column 8, line 29). Regarding claim 35, classification features are determined from calibration spectral data collected on the individual more than one time ("feature sets from training data" at column 39, line 60; the feature sets are derived from multiple collected data; i.e., "more combinations" at column 10, line 12). Regarding claim 36, classification features are determined by similarity between target spectral data and enrolled spectral data ("a feature set constitutes an extraction from among the OSV for each person's training data that is statistically 'most different' from all other persons trained for in regard to discrimination needs" at column 39, line 66). Regarding claims 37 and 38, verification occurs when the comparison is at least as good as a predetermined measure of similarity ("overall match criteria of identification" at column 39, line 53; "predetermined threshold" at column 39, line 19) of a number of enrolled persons ("closest, next closest, etc." at column 39, line 30) and the closest is chosen ("how close the match is to that library

member" at column 39, line 32). Regarding claim 39, an enrollment database of more than one person is disclosed (figure 1A, numeral 44; "all other persons trained" at column 39, line 67).

7. Claims 10, 33, 40 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Prokoski et al. (US 5,163,094 A). Regarding claims 10, 33 and 47, Prokoski discloses a method for verifying the identity of a person ("identity of an individual" at column 1, line 7), comprising: obtaining target optical tissue spectral data from a target individual (figure 3, numeral 34; infrared spectral data is acquired as depicted in figure 4), the data having a number of measurement wavelengths ("3-6 or 8-14 micron ranges are preferred" at column 4, line 52); and positively verifying the target individual purported identity (figure 3, numeral 68) by comparison of authorized tissue spectral data having plural wavelengths to the target tissue spectral data ("comparison may be made with a number of known faceballs stored in the system memory with thermal images of authorized individuals" at column 8, line 39; see figure 3, numeral 66) relative to a preselected threshold ("predetermined threshold" at column 7, line 68). A discriminant analysis is performed to discriminate between the stored, and input spectral data (column 7, line 62) and thus a difference is calculated (column 7, line 62). Regarding claim 40, an embodiment is disclosed where the number of individuals enrolled in the database is equal to one (the "facecard" at column 7, line 37, is a database storing only the identification spectral data for a single person; i.e., the card bearer).



Art Unit: 2621

8. Claims 1, 10, 21, 33, 46 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoianov et al. (US 5,761,330 A). Stoianov discloses a system for verifying the identity of a person (figure 1; "verification" at column 1, line 6), comprising: obtaining target optical tissue spectral data from a target individual ("array  $a_{ik}^v$  is obtained" at column 5, line 28; this array represents the Fourier spectrum of a finger; i.e., "Fourier spectrum" at column 3, line 21), the data having a number of measurement wavelengths (a Fourier spectrum has plural measurement wavelengths, each having "intensity and phase" at column 3, line 53); and positively verifying the target individual purported identity by comparison ("metric of comparison" at column 5, line 34) of authorized tissue spectral data ("database 32 which corresponds to people's fingerprints" at column 5, line 3; "pre-stored template" at column 5, line 30) having plural wavelengths (the pre-stored templates also related to Fourier spectra) to the target tissue spectral data relative to a preselected threshold ("individual threshold" at column 5, line 32).

9. Claims 1, 10, 21-25, 33-38, 46 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Toyoda et al. (US 5,999,637 A). Toyoda discloses a method for verifying the identity of a person ("confirming identities" at column 1, line 11), comprising: obtaining target tissue spectral data from a target individual (figure 5(B), numeral S403), the data having a number of measurement wavelengths (a Fourier spectrum is obtained as depicted in figure 5(B)); and positively verifying the target individual purported identity by comparison (figure 5(B), numerals S404, S405 and

S406) of authorized tissue spectral data (Figure 5(B), "reference fingerprint"; "plurality of comparative fingerprints" at column 6, line 29) having plural wavelengths (figure 5(B), numeral S401; "store the Fourier transformed fingerprint" at column 11, line 23) to the target tissue spectral data relative to a preselected threshold ("correlation value exceeds the threshold .. the arbitrary person is the specified individual" at column 11, line 5). Regarding claims 22-25 and 34-38, a plurality of wavelengths are measured (the Fourier spectrum contains numerous frequencies; far more than four), where an inter-person spectral differences are calculated ("cross-correlation with a number of other people's fingerprints" at column 8, line 26) and wavelengths are selected to maximize spectral differences ("masking operation performed on the Fourier transform plane" at column 19, line 12; "in order to erase ... a pattern of the fingerprint that will largely influence on the production of a high cross-correlation" at column 19, line 19). A plurality of authorized tissue spectra is stored for comparison ("six-hundred comparative fingerprints" at column 8, line 10), further comprising calculating intra-person spectral differences ("autocorrelations" at column 16, line 12), and selecting wavelengths to minimize intra-person differences (this is met in at least two ways; first, "selects one fingerprint according to the above criteria [the autocorrelations]" at column 16, line 16; second, the aforementioned "masking operation" can also be used for this purpose).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3, 6-9, 19, 21-26, 29-32 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wunderman et al. (US 6,122,042 A) and Hoshino et al. (US 4,944,021). Regarding each of these claims, Wunderman discloses an optical tissue spectral identification system as described in the 35 U.S.C. 102 (e) rejection above; the details of which will not be repeated here. Regarding claims 2, 19 and 32, optical radiation reflected from sub-epidermal tissue is measured ("optical subcutaneous identification" at column 37, line 62; the energy is reflected from the tissue as depicted in figure 1B; i.e., the optical energy is "retroreflected" at column 11, line 61). Regarding claims 3 and 19, elements 34, 42 and 40 constitute a spectrometer (i.e., these elements measure the energy of the reflected wavelengths, and perform a "spectrometric analysis" at column 9, line 18). Regarding claims 6-8 and 29-31, near-infrared, visible, and near-ultraviolet are disclosed ("400nm to 5,000 nm" at column 6, line 25). Regarding claims 9 and 22, a classification algorithm is used ("recognize a certain class" at column 8, line 29). Regarding claim 23, classification features are determined from calibration spectral data collected on the individual more than one time ("feature sets from training data" at column 39, line 60; the feature sets are derived from multiple collected data; i.e., "more combinations" at column 10, line 12). Regarding

Art Unit: 2621

claim 24, classification features are determined by similarity between target spectral data and enrolled spectral data ("a feature set constitutes an extraction from among the OSV for each person's training data that is statistically 'most different' from all other persons trained for in regard to discrimination needs" at column 39, line 66). Regarding claim 25, verification occurs when the comparison is at least as good as a predetermined measure of similarity ("overall match criteria of identification" at column 39, line 53; "predetermined threshold" at column 39, line 19). Regarding claim 26, an enrollment database of more than one person is disclosed (figure 1A, numeral 44; "all other persons trained" at column 39, line 67). Regarding claim 19, Wunderman disclosed the apparatus, comprising a computer, input and output devices and a database, as depicted in figure 1A. While Wunderman discloses obtaining an identifier from the target individual ("a PIN number might be required" at column 39, line 37), Wunderman does not disclose selecting the enrolled optical spectral data that corresponds to the target individual's identifier for subsequent discriminant analysis.

NOTE: Wunderman does suggest this claimed requirement by stating, "if there are a large number of permitted persons in the allowed total library set ... a PIN number might be required" at column 39, line 35. However, because the claimed details are only implied, and not specifically taught by Wunderman, examiner has opted call this a "difference", and thus advance the following 35 U.S.C. 103 rejection. Hoshino discloses an identity verification system ("identifying authorized personnel" at column 1, line 12) comprising obtaining the purported identity of the target individual via. a personal identifier ("the ID code from the keyboard" at column 2, line 68; an "ID code is allocated

to each of the registered persons and is entered" as the purported identity of the person seeking verification at column 2, line 61) and utilizing the purported identity of the target individual by selecting identification data that corresponds to the identifier for subsequent discrimination (the ID code "is converted to an address indicating the storage position of the file 14 by an input/output interface" at column 3, line 1; the data is "read out from the file 14" for subsequent discrimination at column 3, line 2). It would have been obvious at the time the invention was made to one of ordinary skill in the art to obtain and utilize the identifier (i.e., the "PIN") of the target individual disclosed by Wunderman, to select the target individual's spectral data that corresponds to the identifier as taught by Hoshino, in order to provide a "system that can be installed inexpensively and compactly because the processor verifies the [input data] referring to only one registered pattern" (Hoshino, column 7, line 11), and in order to provide a rapid and efficient method of extracting the target individual's stored file from a large database for subsequent comparison (as suggested by Wunderman), thereby obviating the time consuming process of comparing the target individual's spectral data with each and every data stored in the database.

12. Claims 1, 21, 27 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Prokoski et al. (US 5,163,094) and Hoshino et al. (US 4,944,021). Regarding each of these claims, Prokoski discloses identifying a target individual by comparing infrared tissue spectral data as described in the 35 U.S.C. 102 rejection above. Regarding claim 27 specifically, an embodiment is disclosed where the

number of individuals enrolled in the database is equal to one (the "facecard" at column 7, line 37, is a database storing only the identification spectral data for a single person; i.e., the card bearer). Prokoski does not disclose obtaining the purported identity of the target individual, and utilizing the purported identity of the target individual to obtain corresponding stored spectral data in the discriminating step. Hoshino discloses an identity verification system ("identifying authorized personnel" at column 1, line 12) comprising obtaining the purported identity of the target individual ("the ID code from the keyboard" at column 2, line 68; an "ID code is allocated to each of the registered persons and is entered" as the purported identity of the person seeking verification at column 2, line 61) and utilizing the purported identity of the target individual in a discriminating step (the ID code "is converted to an address indicating the storage position of the file 14 by an input/output interface" at column 3, line 1; the data is "read out from the file 14" for subsequent discrimination at column 3, line 2). It would have been obvious at the time the invention was made to one of ordinary skill in the art to input and utilize the purported identity of the target individual as taught by Hoshino, as part of the discrimination disclosed by Prokoski, in order to provide a "system that can be installed inexpensively and compactly because the processor verifies the [input data] referring to only one registered pattern" (Hoshino, column 7, line 11), and in order to provide a rapid and efficient method of extracting the target individual's stored file from the database for subsequent comparison, thereby obviating the time consuming process of comparing the target individual's spectral data with each and every data stored in the database.

Art Unit: 2621

13. Claims 10, 12-14, 20, 33 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Messerschmidt (US 5,655,530 A – cited by applicant), Robinson et al. (US 4,975,581 A – INCORPORATED BY REFERENCE IN MESSERSCHMIDT at Messerschmidt column 2, line 50; i.e., “The disclosure of Robinson et al. is incorporated herein by reference”; also cited by applicant), and Peterson et al. (US 6,330,346 B1). Regarding claims 10, 12, 20, 33 and 47, Messerschmidt discloses as system comprising a computer including input devices and output devices (Messerschmidt: figure 1, numeral 30; “computer” at column 13, line 52; the “spectrum analyzer 30” at column 13, line 25 is an input device to the computer; the outputs the result of a comparison as described at column 13, line 29; i.e., “computer to compare the data”), a database (Messerschmidt: “memory” at column 13, line 52) including optical tissue spectra (Messerschmidt: figure 3) for a plurality of samples (Messerschmidt: “calibration samples” at column 8, line 8; the calibration samples are described by Robinson as “plural pre-stored patterns representing absorption by the known fluids at these plural wavelengths” at column 7, line 15), means for obtaining optical tissue spectra from a target individual (Messerschmidt: figure 1) including a radiation source (Messerschmidt: figure 1, numeral 16) projecting optical radiation subcutaneously (Messerschmidt: figure 1, numeral 10) and an optical spectrometer measuring subcutaneous optical intensity over a plurality of wavelengths (Messerschmidt: figure 1, numeral 30), and a program for discriminating between the target spectrum and the samples using the database and target spectrum (Messerschmidt: “multivariate algorithm” at column 8, line 5 and “compare the data

Art Unit: 2621

received from such devices to the model” at column 13, line 28; Robinson: “compared with the calibration samples” and “comparison enables the determination” at column 4, lines 47 and 51 respectively). Regarding claims 13 and 14, Messerschmidt and Robinson (incorporated by reference into Messerschmidt) disclose an FTIR spectrometer (Messerschmidt: “FTIR” at column 14, line 29; Robinson: “Fourier transform infrared spectrometer” at column 7, line 32), and Robinson discloses an alternate embodiment which uses a grating array spectrometer (“standard prism and grating assembly” at column 7, line 33). Messerschmidt does not disclose a database of “authorized individuals”, where the discriminating between the target and stored tissue spectra is for purposes verifying the purported identity of the target individual. Peterson discloses a system for subcutaneous characteristic measurement (“detecting the subcutaneous conditions and/or structure of a living organism” at column 1, line 13) by measuring reflected light (“light-emitting source” and “light-detection element” at column 2, line 8; “720-750 nanometers ... 850-1000 nanometers” at column 3, line 16), comprising a database of authorized individuals (“pre-recorded database” at column 1, line 63), where the discriminating between the target and stored tissue data (“the characteristics are compared with the database for decision-making” at column 1, line 64) is for purposes verifying the purported identity of the target individual (“identification system” at column 1, line 58). It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the subcutaneous measurement system disclosed by Messerschmidt, for the purposes of verifying the identity of a target individual (i.e., by comparison with a database of spectral data of authorized individuals)



Art Unit: 2621

as taught by Peterson, in order to provide Messerschmidt with the additional, and beneficial function of “reliably” detecting the identity of an individual using a method that is “not easily tampered with” (Peterson, column 1, lines 38-39), is inexpensive (Peterson, column 1, line 42) and “can be used or readily placed in a large variety of structures without a great deal of physical alteration” (Peterson, column 1, line 45). Likewise, the reverse of the above combination would have also been obvious. That is, it would have been obvious to utilize the subcutaneous measurement system of Messerschmidt, in order to measure the “subcutaneous conditions and/or structures of a living organism” as required by Peterson (i.e., column 1, line 12), in order to provide an “improved optical interface between a sensor probe and a skin surface or tissue surface of the body containing the tissue to be analyzed” (Messerschmidt, column 5, line 53) which uses an “index matching medium [that] increases the repeatability and accuracy of the measuring procedure” (Messerschmidt, column 8, line 16).

14. Claims 1, 3-5, 19, 21 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Messerschmidt (US 5,655,530 A – cited by applicant), Robinson et al. (US 4,975,581A – INCORPORATED BY REFERENCE IN MESSERSCHMIDT at Messerschmidt column 2, line 50; i.e., “The disclosure of Robinson et al. is incorporated herein by reference”; also cited by applicant), and Peterson et al. (US 6,330,346 B1) as applied to claims 10, 12-14, 20, 33 and 47 above, and further in view of Hoshino et al. (US 4,944,021). Regarding each of these claims,

Art Unit: 2621

neither Messerschmidt, Robinson nor Peterson disclose obtaining the identity of the target individual, and utilizing the purported identity of the target individual for retrieving

15. a corresponding target tissue spectral data from memory in the discriminating step. Hoshino discloses a identity verification system ("identifying authorized personnel" at column 1, line 12) comprising obtaining the purported identity of the target individual ("the ID code from the keyboard" at column 2, line 68; an "ID code is allocated to each of the registered persons and is entered" as the purported identity of the person seeking verification at column 2, line 61) and utilizing the purported identity of the target individual in a discriminating step (the ID code "is converted to an address indicating the storage position of the file 14 by an input/output interface" at column 3, line 1; the data is "read out from the file 14" for subsequent discrimination at column 3, line 2). It would have been obvious at the time the invention was made to one of ordinary skill in the art to input and utilize the purported identity of the target individual as taught by Hoshino, as part of the discrimination disclosed by Peterson (i.e., "the characteristics are compared with the database for decision-making" at Peterson column 1, line 64 ) in the Messerschmidt, Robinson and Peterson combination, in order to provide a "system that can be installed inexpensively and compactly because the processor verifies the [input data] referring to only one registered pattern" (Hoshino, column 7, line 11), and in order to provide a rapid and efficient method of extracting the target individual's stored file from the database for subsequent comparison, thereby obviating the time consuming process of comparing the target individual's spectral data with each and every data stored in the database.

16. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wunderman et al. (US 6,122,042 A) and Itsumi et al. (US 5,559,504). Wunderman discloses identifying a target individual by comparing optical tissue spectral data as described in the 35 U.S.C. 102 rejection of claim 33 above. Wunderman does not disclose adding the target spectrum to the authorization spectra after the verification. Itsumi discloses an identity verification system ("identification device" at column 1, line 11) comprising adding target identification data to authorization data after the verification ("memory is updated" at column 10, line 41; "newly collated input ... data is stored on the memory as the registered data" at column 10, line 43). It would have been obvious at the time the invention was made to one of ordinary skill in the art to add the target tissue spectra of Wunderman to the database of authorization spectra after the target data has been verified as taught by Itsumi, in order to update the stored authorized data compensate for "changes ... as time passes, e.g., a growing child or an individual whose [data] has changed as he [is] injured" (Itsumi, column 10, line 43), thereby causing the target individual to be subjected to "collation with a small degradation in recognition rate over time, thereby improving collation precision" (Itsumi, column 10, line 45).

17. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wunderman et al. (US 6,122,042 A) and Hoshino et al. (US 4,944,021) as applied to claim 21 above, and further in view of Itsumi et al. (US 5,559,504). The Wunderman and Hoshino combination discloses identifying a target individual by

comparing optical tissue spectral data as described in the 35 U.S.C. 103 rejection above. Neither Wunderman nor Hoshino disclose adding the target spectrum to the authorization spectra after the verification. Itsumi discloses an identity verification system ("identification device" at column 1, line 11) comprising adding target identification data to authorization data after the verification ("memory is updated" at column 10, line 41; "newly collated input ... data is stored on the memory as the registered data" at column 10, line 43). It would have been obvious at the time the invention was made to one of ordinary skill in the art to add the target tissue spectra of Wunderman and Hoshino to the database of authorization spectra after the target data has been verified as taught by Itsumi, in order to update the stored authorized data compensate for "changes ... as time passes, e.g., a growing child or an individual whose [data] has changed as he [is] injured" (Itsumi, column 10, line 43), thereby causing the target individual to be subjected to "collation with a small degradation in recognition rate over time, thereby improving collation precision" (Itsumi, column 10, line 45).

### ***Conclusion***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Werner whose telephone number is 703-306-3037. The examiner can normally be reached on M-F, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on 703-305-4706. The fax phone

Application/Control Number: 09/832,534

Art Unit: 2621

numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Brian Werner  
Patent Examiner  
March 28, 2002



**BRIAN WERNER  
PATENT EXAMINER  
ART UNIT 2621**